THE QUALITY OF DENTAL CARE SERVICES PROVIDED BY THE PRIVATE OFFICES IN IASI - PILOT STUDY RESULTS

Elena Mihaela CARAUSU[1], Cristina Gena DASCALU[2]*, Iulian Costin LUPU[3]*, Daniela ANISTOROAEI[4], Georgeta ZEGAN[5]

[1]Assoc. Prof. PhD, „Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Faculty of Dental Medicine, Department of Management and Public Health
[2]Assoc. Prof. PhD, „Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Faculty of Dental Medicine, Department of Medical Informatics
[3]Univ. Assist. PhD, „Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Faculty of Dental Medicine, Department of Management and Public Health
[4]Assoc. Prof. PhD, „Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Faculty of Dental Medicine, Department of Surgery
[5]Prof. PhD, „Grigore T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Faculty of Dental Medicine, Department of Surgery
*Corresponding author, *e-mail*: cdascalu_info@yahoo.com and lupu_costin@yahoo.com

ABSTRACT

Aim of the study was to identify the degree of satisfaction of patients about quality of the private dental medicine practices from Iasi, Romania. **Material and methods.** The authors of this study tested a representative sample of the population, consisting of 144 people, with different professions and ages. The data collection tool was an original questionnaire. Through its administration, it was intended to assess the patient's satisfaction with the dental care they received in different dental offices in Iasi during year 2018. **Results.** The results of the study show that 74.31% of the total patients surveyed are satisfied with the clinical quality of the dental care received, and 18.06% of them are worried about the high prices. The questioned patients believe that dentists with private practice have the necessary equipment and materials to provide dental services at the proper quality. **Conclusions.** Our study offers useful information for quality management of dental medicine services provided to the local population.

Keywords: quality management, dental medicine services, the level of patient satisfaction, dental care, private provider of dental medicine services.

INTRODUCTION

The practice of dentistry is demanding and constantly evolving. In Romania, dental medicine is predominantly a primary health service [1]. Worldwide evidence indicates that the primary health care approach leads to better health outcomes for lower costs [2].

The concept of quality is defined as a multidimensional one. Maxwell [3] suggested six dimensions of quality (access, effectiveness, efficiency, equity, relevance and social acceptability), and Donabedian suggested seven dimensions (acceptability, effectiveness, efficacy, efficiency, equity, legitimacy and optimality). Such dimensions or attributes, in whatever combination, or taken in isolation, constitute a definition of quality of care [4]. Also, the classical triad of *structure*, *process* and *outcome* has been conceived as: "*approaches to obtaining information about the presence or absence of attributes that constitute or define quality*"

[4].

Also, the quality of dental care from the perspective of the individual patient should be considered separately from the perspective of the general population or the dental services providers. Campbell *et all.* [5] summarised the quality for individual patients as '*whether individuals can access the effective care they need with a patient-centred focus on maximising the health outcomes*' [5]. So, to provide for dental medicine the right environment for *quality assurance* a focus on quality across the health system is required. This is because dental primary health care operates within a healthcare system provided by teams within dental practices and organisations, even though it is delivered by and to individuals.

In modern dental medicine, quality assurance is a systematic process, focused on the performance of dental services provided to the patients. This is the starting point for improving the oral health of the population [6]. In this complex context, quality management, through its mechanisms, aims to provide the quality dental services and also to continually improve their quality, taking into account the scientific and technical progress, the available resources and their efficient use. So, in dental medicine, achieving *quality improvement* therefore requires an understanding of the need for multilevel approaches to change. These levels are: (1) the individual one (for example, general dental practitioner); (2) the group/ team (for example dental team in a dental clinic/dental office); (3) the overall organisation (e.g. Local Professional Network); (4) the larger system (for example, the health system) in which individuals and organisations are included. While recognising the independence of each level, quality improvement strategies need also to consider the inter-dependence of these levels [7].

The purpose of this paper is to know the degree of satisfaction of patients about quality of dental care who have received in the private dental medicine practices. Our study proposed four specific objectives: (1) quality evaluation of local dental medicine services; (2) clinical quality evaluation; (3) infrastructure quality evaluation; and (4) professional communication quality evaluation. The reason for choosing this theme is complex and is based on the following premise: knowing the level of patient satisfaction with the quality of dental care received is a particularly important component of the dental services provided and allows for appropriate measures to improve their quality.

MATERIAL AND METHODS

The study was conducted at the Management and Public Health Discipline and Orthodontics Discipline of Dental Medicine Faculty at Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania, in 2018, between January to December.

We tested a representative sample of 144 randomly selected patients from Iasi, Romania, with different professions and ages. Informed consent was obtained from all patients; also, a prior consent was obtained from the dentist. After obtaining their consent, the subjects were asked to take part in our study during the time they spent in the waiting room.

Our study is an opinion survey. The working instrument was a structured questionnaire aimed to investigate patients' level of satisfaction with the dental medicine services provided by local private practices. The questionnaire was anonymous and fully complied with the legislation on personal data protection. The questions in the first part of the questionnaire followed strictly the collection of socio-demographic data, such as age, gender, social environment and

occupation/ profession. The second part of the questionnaire included a set of questions, the purpose of which was to assess the quality of dental medicine services, from the patient's perspective. The questions were grouped according to the interest of our research in the following major categories: (1) addressability of the population to local dental medicine services; (2) evaluation of clinical quality and quality of diagnosis of oro-dental diseases; (3) accessibility of the population to local dental medicine services (financial accessibility, accessibility to dental medicine emergency services, temporal accessibility to dental medicine services, accessibility to specialized dental medicine services, as surgery or orthodontics; (4) the quality of the dental office/ dental clinic infrastructure; (5) the quality of professional communication between the dentist and patient.

The answers to each question were evaluated according to a Likert scale with 5 steps: the first two (5=total agreement and 4=agreement), express patient's satisfaction with the quality of the dental services received; the latter two (2=disagreement and 1=total disagreement), reflect the patient's dissatisfaction; and the third step (3=indifferent) expressed the patient's indifference to respective statement. The questionnaire was pretested before being used in the study. As a result of pretesting, we have made some changes to the terminology to make it easier for patients to understand.

Our study had a cross-sectional design with a quantitative approach. The independent variables were the demographic ones as: gender (male/ female), age (in years), social environment (urban/ rural areas), and the occupation/ profession. The dependent variables were the items of the questionnaire. The Social Science Statistical Package (SPSS), version 19, was used to analyse data collected from study participants, using descriptive statistic and Pearson's chi-square (χ^2) test.

RESULTS

The demographic characteristics

The study group comprised 144 patients (59 male and 85 females), aged between 12 and 74 years old (fig. 1). In the study group have prevailed the patients aged from the 20-29, followed by those aged 30-39 and under 20 years (fig. 2). From all patients, 79 (54.86%) of them were from urban area and 65 (45.14%) from rural area. Regarding the structure of occupations of the studied group, we observe that they were: 58 (40.27%) students, 51 (35.42%) workers, 18 (12.50%) pensioners, 17 (11.81%) intellectuals, 3 (2.08%) unemployed and 7 (4.86%) did not specify the occupation.

The synthesis of the main results obtained about *addressability of the population to local dental medicine offices* is presented in the Table 1: 68 (80.00%) of women and 43 (72.88%) of men addressed dental services, without statistical differences between gender ($p>0.05$).

The synthesis of the main results obtained regarding the *evaluation of clinical quality in dental medicine* is presented in the Table 2: 104 (74.31%) of patients agree with the dentist's involvement in their examination and treatment, and 37 (25.69%) of patients believe that the dentist sometimes works superficially, without statistical differences between gender ($p> 0.05$); 82 (56.95%) of patients are satisfied with received dental treatments, with statistical differences between gender ($p<0.05$).

Evaluation of *population accessibility to local dental medicine services* is shown in Table 3. 95 (65.97%) of patients have financial accessibility for private dental services. 89 (61.80%) of patients allow expensive dental care services, but 26 (18.06%) of patients cannot afford expensive treatments, without statistical differences

between genders (p>0.05); 86 (59.72%) of patients believe that they have access to emergency dental care services, with statistical differences between genders (p<0.05); 91 (63.19%) of patients believe they have access to the specialist dentist; 82 (56.95%) of the patients consider temporary access to dental services, 59 (39.72%) of patients agree with the waiting time and 100 (69.44%) of patients follow the planning of treatment sessions, without statistical differences between gender (p>0.05).

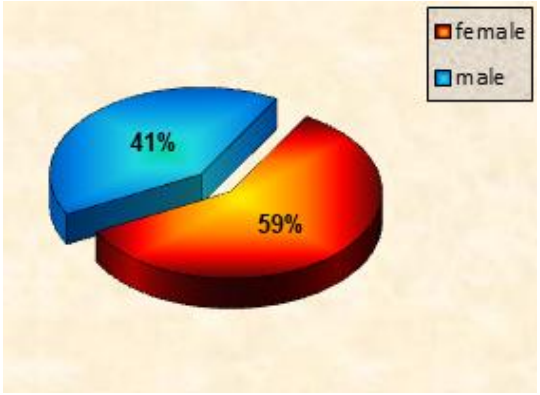

Figure 1. The structure of studied group on gender

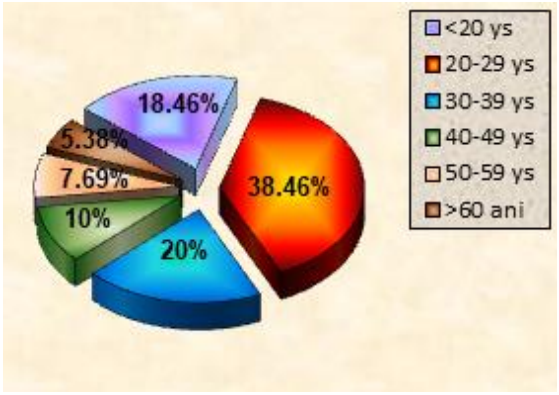

Figure 2. The structure of studied group on age groups

Table 1. Addressability of patients to dental medicine offices

Gender	Total agreement		Agreement		Indifferent		Disagreement		Total disagreement		χ^2	***p* value**
	n	%	n	%	n	%	n	%	n	%		
Female	46	54.12	22	25.88	12	14.12	4	4.71	1	1.17	0.3175526	0.999
Male	28	47.46	15	25.42	12	20.34	3	5.08	1	1.69		
Total	74	51.38	37	25.7	24	16.7	7	4.86	2	1.38		
*Statistically significant differences when p<0.05												

Table 2. Evaluation of clinical quality

Gender	Total agreement		Agreement		Indifferent		Disagreement		Total disagreement		χ^2	***p* value**
	n	%	n	%	n	%	n	%	n	%		
2. Degree of involvement of the dentist in the examination and treatment of patients												
Female	28	32.94	34	40.00	18	21.18	2	2.35	2	2.35	0.817922	0.053
Male	23	38.98	19	32.20	13	22.03	3	5.08	2	3.39		
Total	51	35.42	53	36.81	31	21.53	5	3.47	4	2.77		
3. Patient satisfaction with dental care received from the dentist												
Female	25	29.41	23	27.06	29	34.12	8	9.41	1	1.17	0.890366	0.019*
Male	13	22.03	21	35.59	16	27.12	7	11.86	1	1.69		
Total	38	26.39	44	30.56	46	31.94	15	10.42	2	1.38		
4. Do you consider that your dentist work superficially sometimes?												
Female	8	9.41	10	11.76	31	36.47	19	22.35	15	17.65	0.130409	2.218
Male	8	13.56	11	18.64	13	22.03	18	30.51	11	18.64		
Total	16	11.11	21	14.58	44	30.56	37	25.69	26	18.06		
*Statistically significant differences when p<0.05												

Table 3. Population accessibility to dental medicine services

Gender	Total agreement		Agreement		Indifferent		Disagreement		Total disagreement		χ^2	***p* value**
	n	%	n	%	n	%	n	%	n	%		
5. Financial accessibility of the population to the private dental medicine services												
Female	42	49.41	17	20.00	15	17.65	4	4.71	9	10.59	0.344935	0.892
Male	24	40.68	12	20.34	7	11.86	5	8.47	9	15.25		
Total	66	45.83	29	20.14	22	15.28	9	6.25	18	12.50		
6. Financial accessibility of the population to the expensive dental medicine services												
Female	44	51.76	16	18.82	14	16.47	5	5.88	7	8.24	0.568023	0.326
Male	24	40.68	15	25.42	7	11.86	6	10.17	8	13.56		
Total	68	47.22	21	14.58	21	14.58	11	7.64	15	10.42		
7. Population accessibility to an emergency dental medicine treatment												
Female	26	30.59	25	29.41	19	22.35	13	15.29	2	2.35	0.933321	0.007*
Male	19	32.20	16	27.12	17	28.81	5	8.47	2	3.39		
Total	45	31.25	41	28.47	36	25.00	18	12.50	4	2.77		
8. Population accessibility to the specialist dentist												
Female	35	41.18	21	24.71	13	15.29	8	9.41	6	7.06	0.422266	0.644
Male	18	30.51	17	28.81	13	22.03	4	6.78	9	15.25		
Total	53	36.81	38	26.39	26	18.06	12	8.33	15	10.42		
9. Temporal accessibility of the population to the dental medicine services												
Female	32	37.66	22	25.89	26	30.59	3	3.53	2	2.35	0.055433	3.669
Male	19	32.20	9	15.25	21	35.59	3	5.08	7	11.86		
Total	51	35.42	31	21.53	47	32.64	6	4.17	9	6.25		
10. Waiting time												
Female	15	17.65	17	20.00	35	41.18	6	7.06	13	15.29	0.376225	0.783
Male	10	16.95	8	15.25	23	38.98	11	18.64	6	10.17		
Total	25	17.36	25	17.36	58	40.28	17	11.81	19	13.19		
11. Dentist's respect for treatment scheduling of patients												
Female	27	31.76	29	34.12	21	24.71	7	8.24	2	2.35	0.410276	0.678
Male	23	38.98	21	35.59	9	15.25	2	3.39	3	5.08		
Total	50	34.72	50	34.72	30	20.83	9	6.25	5	3.47		
*Statistically significant differences when $p<0.05$												

Table 4. Evaluation of the quality of the dental medicine infrastructure

Gender	Total agreement		Agreement		Indifferent		Disagreement		Total disagreement		χ^2	***p* value**
	n	%	n	%	n	%	n	%	n	%		
12. The quality level of dental medicine services infrastructure												
Female	24	28.24	32	37.65	26	30.59	2	2.35	2	2.35	0.422266	0.644
Male	14	23.73	21	35.59	19	32.20	2	3.39	2	3.39		
Total	38	26.39	53	36.81	45	31.25	4	2.78	4	2.78		
13. The need to improve the infrastructure of local dental medicine services												
Female	27	31.76	32	37.65	20	23.53	5	5.88	3	3.53	0.21108	1.564
Male	15	25.42	20	33.90	16	27.12	3	5.08	3	5.08		
Total	42	29.17	52	36.11	36	25.00	8	5.56	6	4.17		
*Statistically significant differences when $p<0.05$												

In Table 4 is shown *the evaluation of local dental medicine infrastructure*. 91 (63.19%) of patients consider good infrastructure quality and 94 (65.28%) of patients believe that the local dental care infrastructure needs to be improved, without statistical differences between gender ($p>0.05$).

In Table 5 is shown the *evaluation of professional communication in dental medicine*. 79 (51.39%) of patients consider good professional communication, without statistical differences between gender

(p>0.05).

Table 5. The quality of professional communication in dental medicine

Gender	Total agreement		Agreement		Indifferent		Disagreement		Total disagreement		χ^2	***p* value**
	n	%	n	%	n	%	n	%	n	%		
Female	17	20.00	23	27.06	20	23.53	16	18.82	10	11.76	0.212105	1.557
Male	16	27.12	18	30.51	10	16.95	11	18.64	3	5.08		
Total	33	22.92	41	28.47	30	20.83	27	18.75	13	9.03		
*Statistically significant differences when $p<0.05$												

DISCUSSIONS

Our study evaluated the degree of satisfaction with the quality of dental care of patients who had dental procedures in private dental offices in a calendar year, using an original anonymous questionnaire. Our findings are related to some aspects of addressability of patients by gender, clinical quality assessment in dental medicine, population accessibility to local dental services, assessment of local dental infrastructure and evaluation of dental professional communication.

In our study, we found that female patients had a greater addressability to dental services offices for an oro-dental health problem compared to male patients, but no statistically significant differences. Most patients were satisfied with the professionalism with which their dentist consulted and treated them. A small number of patients considered that they sometimes received superficially, inadequate treatment from their dentist. Our study revealed that patients' financial accessibility to usual dental medicine services was increased and only a small proportion of patients could not afford expensive treatments. Population accessibility to local dental care services in an emergency situation was increased, as is the case with a specialist dentist. Also, most patients respected waiting times and scheduling appointments. The quality of the infrastructure was considered good, but many patients believed that the local dental care infrastructure needs improvement. Much of the patients had good communication with medical staff in dental care.

From the literature of recent years we know about the existence of a causal relationship between the quality of the dental care, the patient's satisfaction regarding the dental care and the profitability of the private dental practices [8]. In the competitive environment of the dental services market, the patient's dissatisfaction with the quality of care received determines the ulterior behaviour. If the patient is satisfied with the quality of the dental care received, the probability that he will return to the same dentist to solve subsequent oro-dental health problems will be higher [9].

One of the most important ways to highlight and promote a private provider of dental medicine services is based on a better quality compared to competition [10]. To achieve this, he must provide dental care to the level of quality desired by the patient and even overcome it. Patients' expectations [11] regarding the quality of dental care are determined by their previous experiences, the reputation of the dental medicine services provider and the public information about it and the quality of the services, as perceived by the patient. The patient will choose a dentist or another according to these criteria, and after completing the dental treatment, he will compare the quality of the dental care, he has actually received and paid, with the ones he wished. If the level of quality of dental

care received is inadequate (does not meet its expectations), the patient will give up and turn to another dentist who has a better quality of dental medicine services provided. If the dental care received is of the quality required by the patient, or better, it will return to the same dentist in the future to solve other oro-dental health problems.

Starting from these simple findings about patient behaviour and how it responds after receiving inadequate dental care, management specialists have recommended to the private providers the introduction of quality management in health services [11] in dental medicine also. Thus, the dentist will be able to provide for each patient the good quality dental care and will respond to level of exigency requested by the patient.

Our study is important because it offers useful information for introduction of quality management in local dental medicine services.

CONCLUSIONS

Our results showed that the majority of the surveyed patients are satisfied with the clinical quality of the dental care received in private dental medicine services. The questioned patients believe that dentists with private practice have the necessary equipment and materials to provide dental services at the proper quality, and the quality of communication with them is good.

Knowing the level of patient satisfaction is an important part of the dental care process and allows for appropriate measures to be taken to ensure the quality of the dental care services provided to the population.

In this study all authors contributed equally.

REFERENCES

1. Duma O, Rosu TS, Manole MB, Petrariu FD, Constantin B. Disparities in the access to primary healthcare in rural areas from the county of Iasi - Romania. Med. Surg. J. (Rev. Med. Chir. Soc. Med. Nat., Iaşi) 2014;118(3):743-8.
2. Campbell SM, Eriksson T. Multiple strategies for quality improvement and patient safety- money alone is not the answer, nor is trust. Eur J Gen Pract. 2011;17: 238-40.
3. Maxwell RJ. Quality assessment in health. Br Med J. (Clin Res Ed) 1984;288: 470-2.
4. Donabedian A. An introduction to quality assurance in health care. Oxford: Oxford University Press; 2003.
5. Campbell SM, Tickle M. What is quality primary dental care? Br Dent J. 2013;215:135-9.
6. Badri M, Attia S, Ustadi A. Healthcare quality and moderators of patient satisfaction: testing for causality. Int J Health Care Quality Assurance. 2009;22:15-20.
7. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83:457-502.
8. ***Dental Quality Alliance. Quality measurement in dentistry: a guidebook. Chicago: American Dental Association; 2012.
9. Mills I, Batchelor P. Quality indicators: the rationale behind their use in NHS dentistry. Br Dent J. 2011;211:11-5.
10. Tickle M, Campbell SM. How do we measure quality in primary dental care? Br Dent J. 2013;215:183-7.
11. Duma O. Health Management [in Romanian]. Iasi: Ed. Pim; 2011.